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**Please find below and/or attached an Office communication concerning this application or proceeding.**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/063,840  
Filing Date: May 17, 2002  
Appellant(s): ACHARYA ET AL.

**MAILED**  
**JUL 24 2007**  
**GROUP 3700**

\_\_\_\_\_  
David Arnold  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed on January 13, 2006 appealing from the Office action mailed May 3, 2005.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Examiner respectfully disagrees with the Applicant. Regarding claims 1, 13, and 23-25 as discussed in remarks page 10, the Applicant's asserts emphasis that the prior art of record, Heuscher et al do not disclose each and every element, specifically, "communicating an exposure marker-in-signal to said electrocardiogram device such that said exposure marker-in-signal is associated with the EKG waveform data". However, Examiner would like to point out that Heuscher et al anticipate the above limitation since the CT image acquisition is gated by ECG or EKG where the gating provides specific phase, in other words, marker in the ECG or EKG.

In addition, regarding the Applicant's assertion of "an exposure marker-in-signal 228 being a CT event signal generated by CT imaging system 4 that is communicated to EKG monitoring device 2 via EKG sync marker input 8 so as to overlay EKG waveform data 200 and indicate the start of a CT scan", Heuscher et al device inherently disclose this limitation. As stated above, the marker-in-signal is disclosed. In addition, Heuscher et al's scanning includes specific protocol where the control of the CT scan use look up table to assess patient characteristic ECG, i.e. ECG waveform and phase in which the CT scan acquires the images (col. 5, line 61 – col. 6, line 9).

More over, as to Applicant's assertion of communication to the EKG monitoring device, Heuscher et al clearly anticipate this limitation since the CT control monitors the ECG or EKG data, i.e. communicates with ECG or EKG to obtain the phase information of the patient to control the CT scanning (col. 5, lines 54-60).

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Furthermore, Heuscher et al inherently anticipate the display of ECG or EKG with Ct since the CT images synchronized with the ECG or EKG signal with gating information that includes the phase of the ECG or EKG waveform. Although Heuscher et al is silent as to the display format of the ECG or EKG data, the image reconstruction and display conveys this information through display. Thus, ECG or EKG waveform and markers are inherent in Heuscher et al.

Therefore, the rejection from the previous office action stands and repeated below with addition to claims 28-30.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-30 rejected under 35 U.S.C. 102(b) as being anticipated by *Heuscher et al* (US 6,154,516).

Heuscher et al anticipate all claimed features in claims 1-30.

***Claims 1, 7, 9-13, 18-25, and 27:*** Heuscher et al disclose a method and system where EKG waveform data is used to gate of time a medical image device wherein the medical imaging device is a computed tomography image system. The image acquisition begins by first generating ECG or EKG waveform data using electrocardiogram device 80, 104 (figures 1 and 2) and operating CT imaging system 10 to create CT images and communicating the EKG waveform data associated with the CT image data (col. 2, lines 13-24; col. 2, line 62 – col. 3, line

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8; col. 4, line 7 – col. 7, line 59). In addition, Heuscher et al disclose an image memory medium 66, which stores image data with the correlated EKG or ECG waveform.

**Claims 2, 5, and 14:** Heuscher et al further disclose that the ECG or EKG monitor is coupled to a patient to monitor the heart activity or cardiac function (col. 6, lines 45-50).

**Claims 3, 4, 15, 16, 14-22, and 28-30:** Heuscher et al further disclose that the ECG or EKG waveform is displayed with the CT image on display 70 (col. 5, lines 37-53). Heuscher et al inherently anticipate the display of ECG or EKG with Ct since the CT images synchronized with the ECG or EKG signal with gating information that includes the phase of the ECG or EKG waveform. Although Heuscher et al is silent as to the display format of the ECG or EKG data, the image reconstruction and display conveys this information through display (col. 5, line 61 – col. 6, line 9; col. 7, lines 21-32). Thus, ECG or EKG waveform and markers are inherent in Heuscher et al.

**Claims 6, 8, and 17:** Heuscher et al disclose CT image correlation to the phase or the ECG or EKG waveform, i.e. peaks such as “R” (col. 7, lines 33-59).

**Claim 26:** Heuscher et al shows in figure 1 that the ECG is coupled to a patient in the center of the CT (however, the patient is not labeled).

#### **(10) Response to Argument**

In regards to claims 1, 13, 23, 24, and 25 (page 6), the applicant’s argument that the inherency has not been shown based on the Heuscher et al. The basis of applicant’s argument is that the claimed invention includes limitation “an exposure marker-in-signal and communicating the exposure marker –signal from the imaging system to the electrocardiogram device,” which the applicant contends that Heuscher et al do not anticipate. The inherency of cardiac gating

with imaging technique is to communicate triggering of the imaging system with ECG/EKG and vice versa. Such triggering event is critical for the CT image reconstruction in Heuscher et al or any other cardiac imaging technique. Whether the imaging system or ECG/EKG system triggers the image acquisition, the image date and reconstruction is correlated to ECG/EKG signal so that the image reconstruction is correlated to a specific phase of the ECG/EKG wave (col. 7, lines 21-32 and figure 2). Without the communication between the so-called “exposure marker-in signal” (which is merely triggering event) is necessary in order for the images and ECG/EKG data to be correlated. Otherwise, the imaging system’s reconstruction is blind to the cardiac phase, thus image reconstruction cannot be made based on the cardiac phase without the triggering event.

In addition, the display of such triggering event is no more novel than indicating that the CT image acquisition has begun, and does not provide any advantage or improvement over Heuscher et al.

In regards to claims 7 and 18, the applicant’s argument is based on same grounds as in claims 1, 13, 23, 24, and 25. Therefore, examiner’s response is referred to reasoning stated above.

In regards to claims 10 and 20, the applicant’s argument is based on same grounds as in claims 1, 13, 23, 24, and 25. Therefore, examiner’s response is referred to reasoning stated above.

In regards to claim 9, the applicant’s argument is based on same grounds as in claims 1, 13, 23, 24, and 25. Therefore, examiner’s response is referred to reasoning stated above.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the examiner in the Related Appeals and Interferences section of this examiner's answer identifies the Board.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

BR

Baisakhi Roy


Examiner

Art Unit 3737

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